# SCHEDULE AT A GLANCE

**MONDAY, AUGUST 10**

<table>
<thead>
<tr>
<th>Time</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>11:00 a.m.–2:00 p.m.</td>
<td>Pre-Conference Workshop: Seismic Design of Buried Water and Wastewater Pipelines</td>
</tr>
<tr>
<td>2:00 p.m.–3:00 p.m.</td>
<td>Break</td>
</tr>
<tr>
<td>3:00 p.m.–6:00 p.m.</td>
<td>Pre-Conference Workshop: Thrust Restraint Design of Buried Pipelines</td>
</tr>
</tbody>
</table>

**TUESDAY, AUGUST 11**

<table>
<thead>
<tr>
<th>Time</th>
<th>Schedule</th>
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</thead>
<tbody>
<tr>
<td>10:00 a.m.–10:30 a.m.</td>
<td>Welcome to the UESI Pipelines 2020 Virtual Conference</td>
</tr>
<tr>
<td>10:00 a.m.–4:30 p.m.</td>
<td>Exhibit Hall Open</td>
</tr>
<tr>
<td>10:30 a.m.–11:30 a.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>11:30 a.m.–12:30 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>12:30 p.m.–1:30 p.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>1:30 p.m.–2:30 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>2:30 p.m.–3:30 p.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>3:30 p.m.–4:30 p.m.</td>
<td>Virtual Social Hour</td>
</tr>
</tbody>
</table>

**WEDNESDAY, AUGUST 12**

<table>
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<tr>
<td>10:00 a.m.–11:00 a.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>10:00 a.m.–4:00 p.m.</td>
<td>Exhibit Hall</td>
</tr>
<tr>
<td>11:00 a.m.–12:00 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>12:00 p.m.–1:00 p.m.</td>
<td>Keynote: Peter Lake and Bechtel Lecture</td>
</tr>
<tr>
<td>1:00 p.m.–2:00 p.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>2:00 p.m.–3:00 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>3:00 p.m.–4:00 p.m.</td>
<td>Concurrent Technical Sessions</td>
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**THURSDAY, AUGUST 13**

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
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</tr>
<tr>
<td>10:00 a.m.–4:00 p.m.</td>
<td>Exhibit Hall Open</td>
</tr>
<tr>
<td>11:00 a.m.–12:00 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>12:00 p.m.–12:30 p.m.</td>
<td>Keynote: Melissa Marshall</td>
</tr>
<tr>
<td>12:30 p.m.–1:30 p.m.</td>
<td>Concurrent Technical Sessions</td>
</tr>
<tr>
<td>1:30 p.m.–2:30 p.m.</td>
<td>Networking Break</td>
</tr>
<tr>
<td>2:30 p.m.–3:00 p.m.</td>
<td>Poster Competition Winners &amp; Conference Raffle Prizes</td>
</tr>
<tr>
<td>3:00 p.m.–4:00 p.m.</td>
<td>Concurrent Technical Sessions</td>
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Welcome to the 2020 UESI Pipelines Conference
A Virtual Experience!

Our last Pipelines Conference in 2019 took place in Nashville, the capital of country music. This year we had to make the difficult decision to translate the program into a virtual setting to ensure the health and safety of all participants.

This conference has always provided a great forum for pipeline and utility practitioners to meet to exchange ideas, share knowledge, learn from each other, and swap stories. As always, we have an outstanding lineup of technical sessions, panel discussions, and two pre-conference workshops.

We extend our gratitude to the many volunteers who have spent a lot of time preparing and recording a content-driven conference that will maximize benefits to participants via a different approach adapted to what the current climate allows.

We have created new and different ways for people to interact with one another as well as with vendors and sponsors in our virtual tri-dimensional exhibit floor and networking zoom rooms. We would like to thank all of our vendors and partners who are continuing to support this program. We would not be able to do it without you.

Let’s embrace this unique opportunity to learn and network and make the best of it!

Please, stay safe and we will see each other soon!

Lynn E. Osborn, P.E., F.ASCE
UESI President 2020
Owner, LEO Consulting, LLC

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UESI President 2020
Owner, LEO Consulting, LLC

Enjoy Pipelines 2020 and this virtual delivery.

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UESI President 2020
Owner, LEO Consulting, LLC

Conference Co-Chairs
Jim Geisbush, P.E., P.M.P., F.ASCE
Sr. Civil Engineer, Central Arizona Project
Juan D. Gomez, Ph.D., P.E.
Director, San Antonio Water System

Technical Program Co-Chairs
J. Felipe Pulido, P.E., M.ASCE
Senior Project Manager, OBG Part of Ramboll
Mark Poppe, P.E., M.ASCE,
Principal Engineer, Brown and Caldwell

Advisors to Technical Co-Chairs
Jeffrey W. Heidrick, P.E., ENV SP, M.ASCE
Associate Project Manager, Water, Burns & McDonnell
Mark S. Mihm, P.E., ENV SP, CDT, M.ASCE
Professional Associate, Water/Wastewater, Senior Project Manager, HDR
Shah Rahman, MBA, M.ASCE,
Practice Leader, KCI Technologies

Publicity & Media Coordinators
Robert Carpenter, AIF, M.ASCE
Oildom Publishing
Mike Kazdi
Associate Editor, Trenchless Technology and North American Oil & Gas Pipelines

ASCE Pipelines Division
ExCom Liaison
Anna Pridmore, Ph.D., P.E., M.ASCE
Vice President, Pipeline Solutions, Structural Technologies

International Coordinator
Sandra Rolfe-Dickinson, CEng, P.Eng.
Technical Director, Pipetechnics Ltd.

Education Co-Chairs
Renee Mayer, P.E., M.ASCE,
Transportation Utility Program Manager, HDR Engineering, Inc.
Erin McGuire, P.E., M.ASCE
CDM Smith

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Erin McGuire, P.E., M.ASCE
CDM Smith
This workshop presents the upcoming ASCE’s Manual of Practice on Thrust Restraint Design of Buried Pipelines. This MOP presents a unified approach to thrust restraint design for all pipe materials, developed based on pipe-soil interaction principles to improve current practice. Speakers from the task committee will present an overview of the MOP, including: thrust restraint fundamentals, historical development of thrust restraint design practices, geotechnical parameters and soil-pipe interaction, an improved approach to thrust block design, analytical models for continuous and segmented pipelines; and, simplified approach for restrained joint pipelines. Special considerations required for common thrust restraint design and construction issues will also be presented.

**Objectives:**

- Present the manual of practice for thrust restraint design of buried pipelines
- Provide an introduction to the fundamentals of thrust restraint design along with a summary of historical development leading to current practices
- Discuss geotechnical parameters and soil-pipe interaction, including: Contribution of frictional resistance; Soil parameters for assessing axial behavior of restrained pipelines; Contribution of Passive Earth Pressure Resistance; Soil parameters for assessing transverse behavior of restrained pipelines
- Present an improved approach for the design of thrust blocks in buried pipelines
- Discuss material-specific considerations for thrust restraint design for steel, concrete, ductile iron, PVC, polyethylene, and fiberglass pipe materials
- Present detailed analytical models for bends in continuous and segmented buried pipelines
- Present a simplified unified empirical approach to restrained joint design for bends in buried pipelines
- Discuss the extension of the design approach from bends to other sources of thrust, such as tees, valves, reducers, dead ends, and multiple fittings
- Discuss special design considerations for common thrust restraint design and construction pitfalls.
- Present practical thrust restraint design examples. (Participants are encouraged to bring their own calculators to fully participate in these design exercises)

**Registration Fee:** $45

**Number of PDHs:** 3 hrs

**THRUST RESTRAINT DESIGN OF BURIED PIPELINES**

3:00 p.m.–6:00 p.m.

**Lead:** Stephen Shumaker, P.E., M.ASCE, BCEE – Senior Civil Engineer, CDM Smith

**Moderator:** Sri Rajah, PhD, P.E., G.E., S.E., P.Eng., F.ASCE – Principal Engineer, CDM Smith

**Speakers:**

- Henry Bardakjian, P.E., M.ASCE – Consulting Engineer,
- Keith Bushdiecker, P.E. – Sr. Water/Wastewater Engineer, HDR,
- William Whidden, P.E., M.ASCE – Project Manager/Senior Engineer, Woolpert,
- Allen Cox, P.E., MASCE – Envision SP, Regional Director Ductile Iron Pipe Research Association,
- Bill Brick, P.E., MASCE, – Senior Project Manager CDM Smith

This year, expert judges will vote on their own choice of Best Poster!
TUESDAY, AUGUST 11

WELCOME
8:00 a.m.–9:30 a.m.

Join us for the introductory event of the Pipelines 2020 Conference! Start the morning with a welcome from Thomas W. Smith, III, ENV SP, CAE, FASCE, Executive Director, American Society of Civil Engineers, and Jean-Louis Briaud, Ph.D., P.E., D.GE, Dist.M.ASCE, ASCE President 2020, followed by UESI Pipelines 2020 Conference Co-Chairs: Jim Geisbush, P.E., PMP, FASCE, Sr. Civil Engineer, Central Arizona Project; and Juan D. Gomez, Ph.D., P.E., Director, San Antonio Water System.

The UESI 2020 president Lynn E. Osborn, P.E., FASCE will talk about the institute activities this year, followed by Anna Pridmore, Ph.D., P.E., M.ASCE, Vice President, Pipeline Solutions, Structural Technologies, who will close with a few words on behalf of the Pipelines Executive Committee.

Jean-Louis Briaud, Ph.D., P.E., D.GE, Dist.M.ASCE, ASCE President 2021

Jean-Louis Briaud, Ph.D., P.E., D.GE, Dist.M.ASCE, is a distinguished professor of civil engineering and director of the National Geotechnical Experimentation Site at Texas A&M University. He is also holder of the Spencer J. Buchanan chair at Texas A&M University’s Zachry Department of Civil Engineering.

Briaud recently completed a three-year term on the ASCE board of direction and previously served as president of the Geo-Institute. He was also president of the Federation of International Geo-Engineering Societies. In 2014, Briaud was recognized as a Distinguished Member of ASCE.

Briaud started his career four decades ago as an assistant professor at Texas A&M University. He has also worked as a consultant on numerous projects, including highway embankments, oil tanks, dams, bridges, levees, shallow and deep foundations and soil erosion. He is a licensed professional engineer in Texas.

Additionally, he has written two books, “Geotechnical Engineering” and “The Pressuremeter”, and published about 300 articles and reports. He has received the Ralph Peck Award from ASCE, the CGS Geoffrey Meyerhof Foundation Engineering Award from Canada and the Honorable Aitalyev Medal from Kazakhstan. Jean-Louis will talk about some of ASCE’s recent initiatives and why every civil engineer should be a member.

EXHIBIT HALL OPEN
10:00 a.m.–4:30 p.m.

CONCURRENT TECHNICAL SESSIONS
10:30 a.m.–11:30 a.m.

STOP AND CHAT ROOM
Have you missed your peers? This is an open dialogue room for you to say hello and catch up with your friends in an informal session.

GAME ROOM HOSTED BY SHERLOCK’S ESCAPES
Who is Agent X, Masked Vigilante and freelancer for Sherlock’s Escape Detective Agency? That’s what you’ll need to find out in order to collect the very generous 7-figure reward. Luckily, you have figured out where their secret lair is located! Now unmasking this crime fighter is as simple as taking that rickety, old elevator down to his lair and revealing their identity. Or is it?

Are you ready to dive right into this world of vigilantes and villains to unravel their secrets and mysteries?

TRIVIA ROOM
Join our MC, Mr. Bob Anderson of ASCE, for a fun Civil Engineering trivia game. The participant/s with the most correct answers will win an Amazon gift card.

POSTER VIEWING IN EXHIBIT HALL
TUESDAY 10:00 A.M.–THURSDAY 2:00 P.M.

New this year: Poster Competition – Attendees and a panel of expert judges will vote on their own choice of Best Poster!
2020 Stephen D. Bechtel Pipeline Engineering Award

Established by the ASCE Board of Direction in 1970, this award recognizes outstanding achievements in pipeline engineering. The Bechtel Foundation donated funds to support the award in honor of contributions made by Stephen D. Bechtel. The award is made annually to an ASCE member who has made a significant contribution to the advancement of pipeline engineering in research, planning, design, or construction. The 2020 Bechtel Award recipient is George Ruchti.

George Ruchti, M.ASCE

George F. Ruchti, Jr. has been selected as the recipient of the 2020 ASCE Stephen D. Bechtel Pipeline Engineering Award. With 55 years of hard work and leadership in the civil infrastructure industry, one of Mr. Ruchti’s most valuable contributions to the Pipelines industry has been his unique ability to educate owners, engineers, and contractors on the pipeline design and installation process in a manner that everyone could understand – success through simplicity.

This approach created major pipeline projects that could be implemented in the field with minimal complications. Through this focus on collaboration among all stakeholders early in the process, George has delivered superior pipeline design work, and helped to facilitate manufacturing and construction on many high-profile projects. His willingness and dedication – and taking the time necessary to ensure success throughout all aspects of the project – is what built George’s impeccable reputation in the Pipelines industry.

As a steward for the profession, George has many accomplishments across a full spectrum of the industry, including pipeline enhancements that were patented in the 1970’s and still utilized today. He blazed a trail for the adoption of the use of steel pipelines, leading to installation of hundreds of miles along the East Coast. His influence was extensive and included design, manufacturing, installation and long term protection.

ASCE Pipeline Division Award of Excellence

The ASCE Pipeline Division Award of Excellence was established in 1988 by the Pipeline Division. It is given to a Fellow, Member, or Associate Member of ASCE who is adjudged by the Executive Committee to have given outstanding continuous and conspicuous service to the profession, ASCE, and the Pipeline Division. This year’s recipient is Tennyson Muindi.

Tennyson Muindi, P.E., F.ASCE

Lead Associate, McMillen Jacobs Associates

Tennyson Muindi has 30 years of experience and has actively participated as project manager or project engineer in a wide range of geotechnical engineering projects. Mr. Muindi’s primary area of interest is in pipeline infrastructure and underground construction. His experience covers a broad range of service areas including planning, implementation, and reporting of geotechnical investigations; conceptual level planning and design studies; detailed design studies and preparation of contract documents.
Mr. Muindi is currently serving as the past Chair of UESI Pipelines Division EXCOM. He was the Conference Co-Chair of the 2018 Pipelines Conference held in Toronto, Canada. He has been actively involved with the ASCE Pipelines Division Technical Committee for Trenchless Installation of Pipelines (TIPS) since 2004 and served as its Chair from 2010 to 2016. While serving on TIPS, he was involved in the development of new MOPs and updating of existing MOPs that included HDD, Pipe Bursting and Auger Boring.

During the period 2001 to 2010 he served as a member of the Transportation Research Board Committee on Soil Structure Interaction. He also served on the American Council of Engineering Companies/Massachusetts (ACEC/MA) as Chair/Co-Chair of Leadership Education Committee during the period 2003 through 2008.

A licensed professional engineer in Massachusetts, New York, Rhode Island and Virginia, he holds a bachelor’s degree in civil and environmental engineering from the University of Rhode Island, and a master’s degree in civil engineering from the University of Massachusetts at Amherst.

CONCURRENT TECHNICAL SESSIONS
1:00 p.m.–2:00 p.m.

NETWORKING BREAK
2:00 p.m.–3:00 p.m.

CONCURRENT TECHNICAL SESSIONS
3:00 p.m.–4:00 p.m.

THURSDAY, AUGUST 13

EXHIBIT HALL
10:00 a.m.–4:00 p.m.

CONCURRENT TECHNICAL SESSIONS
10:00 a.m.–11:00 a.m.

NETWORKING BREAK
11:00 a.m.–12:00 p.m.

KEYNOTE
12:00 p.m.–12:30 p.m.

Keynote Speaker: Melissa Marshall

Melissa Marshall is the founder of Present Your Science, a consulting company that provides on-site group workshops, conference sessions, and 1:1 coaching. She is on a mission: to transform how scientists, engineers, and technical professionals present their work. That’s because she believes that even the best technical ideas are destined to remain undiscovered unless presented in a clear and compelling way that sparks innovation and drives adoption.

For over a decade, she’s traveled around the world to work with Fortune 100 corporations, institutions and universities, teaching the proven strategies she’s mastered through her consulting work and during her time as a faculty member at Penn State University. Melissa is the go-to expert that places like NASA, the American Heart Association, Pfizer, and Harvard Medical School consult when they need to present their world-changing research.

In 2019, Microsoft recognized Melissa’s work in dramatically changing the way technical professionals use PowerPoint to present their science by naming her a Microsoft MVP or Most Valuable Professional.

Presentation Topic: Talk Nerdy to Me: Strategies for Successful Technical Communication

Have you ever tried to talk about a new technical project, only to be met with blank stares from your audience? Are you tired of the lifeless, text heavy, bullet-pointed slides that make up most presentations? Did you ever have a slam-dunk winner of a technical proposal go in front of a key stakeholder only to be rejected because they didn’t “get it”?

Join our keynote speaker, scientific presentations expert Melissa Marshall, to learn some practical strategies to immediately transform your technical presentations! Go from blank stares to buy in with your next talk.

POSTER VIEWING IN EXHIBIT HALL
TUESDAY 10:00 A.M.—THURSDAY 2:00 P.M.

New this year: Poster Competition – Attendees and a panel of expert judges will vote on their own choice of Best Poster!

CONFERENCE AGENDA

POSTER COMPETITION WINNERS, CONFERENCE RAFFLES AND INTRODUCTION TO UESI PIPELINES 2021 CONFERENCE
2:30 p.m.–3:00 p.m.

Harshit Shukla, Ph.D., S.M.ASCE, this year’s posters coordinator, will reveal the winners of the poster competition.

Shah Rahman, MBA, M.ASCE, Practice Leader, KCI Technologies, our exhibits chair, will present the lucky raffle winners.

Jason Lueke, Ph.D., M.ASCE, National Practice Leader, Trenchless, Associated Engineering, co-chair of the UESI Pipelines 2021 Conference will introduce next year’s destination!

CONCURRENT TECHNICAL SESSIONS
3:00 p.m.–4:00 p.m.

SAVE THE DATE

Pipelines 2021 Conference
Calgary, Alberta | Aug. 3–6

Building Today’s Infrastructure for a Changing Tomorrow

www.pipelinesconference.org | www.pipelines2021.org
THANK YOU TO OUR TECHNICAL COMMITTEE

Mark A. Poppe, P.E., M.ASCE, Technical Program Co-Chair | Juan Felipe Pulido, P.E., M.ASCE, Technical Program Co-Chair
Jeffery W. Heidrick, P.E., ENV SP, M.ASCE and Mark S. Mihn, P.E., ENV SP, M.ASCE, Advisors to the Technical Program Co-Chairs

We would like to thank the individuals who participated as part of the 2020 Technical Committee. Everyone worked as a team starting with abstract, paper and poster reviews and through the construction of this year’s Technical Program. To all those continuing to assist as Track Chairs and Moderators, we thank you in advance for your valuable contributions which will make the conference a success!

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CONFERENCE AGENDA

THANK YOU TO OUR TECHNICAL COMMITTEE

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Scott Christensen
Joseph Conti
Andrew Costa
Kyle Couture
Randolph Crews
Amin Darabnoush Tehrani
Beatriz Dongell

POSTER PRESENTATIONS

Posters will be available for viewing from Tuesday 10:00 a.m.–Thursday 2:00 p.m.

New this year: Poster Competition – Attendees and a panel of expert judges will vote on their own choice of Best Poster!

720097 – A Component-Based Approach in Assessing Sewer Manholes – Khalid Kaddoura, Tarek Zayed

740055 – Stray Currents, Corrosive Soil and Wall Loss, Oh My! Harnessing Decision Intelligence and Inspection Technologies to Prevent Main Failures – Eric Toffin, James Stewart, John Lamica

742002 – Prediction of Pipe Failures in Wastewater Networks Using Random Forest Classification – Razieh Tavakoli, Ali Sharifara, Mohammad Najafi

743502 – Field investigation of Metal Multi-Pipe Culvert under Shallow Cover – Husam H. Hussein, Issam Khoury, Shad M. Sargand, Fouad Al. Rikabi


744141 – How to Get From Point A-B – Cross-Country Alignment Saves $$ for Rural Water Transmission Line – Hunter B. Hanson

744757 – Leveraging Pressure-Monitoring Data for Water Pipeline Condition Assessment Using Neural Networks and Evolutionary Optimization Algorithms – Ahmad Momeni, Kalyan R. Piratla

744801 – Development of a Fuzzy Inference Performance Rating System for Drinking Water Pipelines Using a Comprehensive List of Input Variables – Hao Xu, Anmol Vishwakarma, Sunil K. Sinha

756002 – Decision-making for Pipe Rehabilitation in Water Pipe Networks Subject to Earthquakes Using Simulated Annealing – Abhijit Roy, Binaya Pudasaini, Mohsen Shahandashti

756004 – Jim Creek Siphon Rehabilitation – Greg Smith


756007 – Seismic Damage and Renewal Cost Analysis of Buried Water Pipelines: A Python-based Computational Framework – Ram Krishna Mazumder, Abdullahi M. Salman, Yue Li, Xiong Yu


756009 – Transmission or Distribution: A Matter of Semantics? Or is it Both? – Kyle H. Kasper, Jason Kirby

756010 – Unveiling Actual System Pressures – Amy Marroquin, Calvin Durel
Tuesday, August 11, 10:30 am to 11:30 am

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<tr>
<th>TRACK A</th>
<th>TRACK B</th>
<th>TRACK C</th>
<th>TRACK D</th>
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<tr>
<td>Planning &amp; Design</td>
<td>Trenchless</td>
<td>Condition Assessment</td>
<td>Construction and Rehab</td>
<td>UES/Multidiscipline</td>
</tr>
<tr>
<td>Rosser Standifer</td>
<td>Jeffrey Shoaf</td>
<td>Jonathan Shirk</td>
<td>Alisa Gruber/Rich Mielke</td>
<td>Doug Jenkins/Jerry Snead</td>
</tr>
</tbody>
</table>

**SESSION A1**

**PIPE MATERIALS**

SCOTT WILLIAMS

535184 – AWWA C305 – A New Standard for CFRP Renewal and Strengthening of PCCP

**Speaker(s):** Mehdi Zarghamee

535114 – Designing an Economical FRP System for Pipeline Rehabilitation

**Speaker(s):** Fadat Sever, Mo Ehsani

534937 – Thin-Walled Synthetic Fiber Reinforced Concrete Pipe Performance Under Cyclic Loading

**Speaker(s):** Fouad Al Rikabi, Shad M. Sargand, Issam Khoury, John Kurdziel, Safiya Ahmed, Husam Hussein

**SESSION B1**

**HORIZONTAL DIRECTIONAL DRILLING**

JEFFREY SHOAF

524086 – 12-inch Water Line Horizontal Directional Drill across Hunting Bayou using Cartridge Method

**Speaker(s):** Christine Kirby, Eric Hernandez, Anh Hunter, Samson D'Silva

532037 – 24-inch Force Main by HDD for Dallas Water Utilities

**Speaker(s):** James Bryan, Marty Paris

744390 – Sliplining 120-Inch RCP Wastewater in Dallas, Part 2

**Speaker(s):** Marty Paris

744752 – CIPP for Tomorrow – What is Needed?

**Speaker(s):** Michael Gipso

535617 – Estimating Level of Service Interruption from Water Main Breaks as Consequence of Failure

**Speaker(s):** Amin Ganjidoost, Karl Ivan San Luis, Craig M. Daly

**SESSION C1**

**REHABILITATION AND WATER BREAKS**

JONATHAN SHIRK

**SESSION D1**

**CRITICAL REHABILITATIONS**

ALISA GRUBER

535116 – Rehabilitation of a Critical High-Pressure Transmission Main Underneath and in the Vicinity of a Major Highway

**Speaker(s):** Murat Engindeniz, Roman Obzeja, Sara Mathis, Kristen Peterson

535568 – A Modern Solution for an Old Problem – Utilizing both CIPP and CFRP for Aerial Pipeline Rehabilitation

**Speaker(s):** Tim Peterie, Amber Wagner

535577 – Thorny Details of the Rose Canyon Trunk Sewer Rehabilitation

**Speaker(s):** Casey Raines, Greg Watanabe

**SESSION E1**

**MATERIALS AND RISKS**

DOUG JENKINS

534305 – Detecting High Risk Zones Using a Spatial Clustering of Pipe Breaks

**Speaker(s):** Thomas Chen, Kate Zhao, Craig M. Daly

535483 – A 60-year History of the Efficacy of Polyethylene Encasement of an Iron Pipe Installation in an Aggressive Soil Environment

**Speaker(s):** Lewis Horn

534305 – Detecting High Risk Zones Using a Spatial Clustering of Pipe Breaks

**Speaker(s):** Thomas Chen, Kate Zhao, Craig M. Daly

535577 – Thorny Details of the Rose Canyon Trunk Sewer Rehabilitation

**Speaker(s):** Casey Raines, Greg Watanabe

535617 – Estimating Level of Service Interruption from Water Main Breaks as Consequence of Failure

**Speaker(s):** Amin Ganjidoost, Karl Ivan San Luis, Craig M. Daly

535114 – Designing an Economical FRP System for Pipeline Rehabilitation

**Speaker(s):** Fadat Sever, Mo Ehsani

534937 – Thin-Walled Synthetic Fiber Reinforced Concrete Pipe Performance Under Cyclic Loading

**Speaker(s):** Fouad Al Rikabi, Shad M. Sargand, Issam Khoury, John Kurdziel, Safiya Ahmed, Husam Hussein

Tuesday, August 11, 10:30 am to 11:30 am

**CONCURRENT TECHNICAL SESSIONS**

The UESI Pipelines 2020 Virtual Experience will occur during Eastern Daylight Time (EDT).
## Pipeline Engineering – Resiliency in Infrastructure

**Tuesday, August 11, 12:30 pm to 1:30 pm**

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### SESSION A2
**PLANNING**
SCOTT WILLIAMS

- **534246** – Preparing for the Unexpected During Design and Construction
  **Speaker(s):** Sierra McCreary, Timothy Weaver

- **535385** – Balancing Present and Future Needs
  **Speaker(s):** Nathan Boyd, Thomas Dumm

- **535044** – Pojoaque Basin Regional Water System Modeling and Challenges
  **Speaker(s):** Julia Chivington-Buck, Eric Smith, Stephen Shumaker, Sri Rajah, Leonel Almanzar, Chris Ott, Juan Samaniego, Jerry Edwards, Fabian Montana, James Kim

### SESSION B2
**PANEL**
SUNIL SINHA

- **535268** – Applying Risk Management Principles and Innovative Technologies to Effectively Manage Water Infrastructure
  **Speaker(s):** Sunil Sinha, Ahmad Habibian, Devan Thomas, Matt Carter, Jian Zhang

### SESSION C2
**FAILURE ANALYSIS**
SHAOQING GE

- **536199** – Does Acoustic Wave Propagation Detect Damage in Large Diameter Cast-Iron?
  **Speaker(s):** Ali Ali, Marshall Kennedy, Cameron White

- **744185** – Uncertainty Quantification of the Structural Capacity of Pipelines Using Separation of Variables Methodology
  **Speaker(s):** Juan Jimenez-Chong, Omer Erbay, Frederic Grant, Peter Nardini, Murat Engindeniz

- **535493** – A Novel Water Pipeline Asset Management Scheme Using Hydraulic Monitoring Data
  **Speaker(s):** Kalyan R. Piratla, Ahmad Momeni

### SESSION D2
**REHABBING METHODS AND EMERGENCIES**
ALISA GRUBER

- **742403** – Line Stopping the City of Houston’s Large Diameter Transmission Line for Valve Replacement
  **Speaker(s):** Eric Hernandez, Gregory Henry, Singarpal Sakhon

- **744034** – Successfully Navigating the Challenges of Emergency Interceptor Repair Under the Wall Street of Whiskey
  **Speaker(s):** David Hafner, Heather Dodds, Nick Ulliman, Michael McReynolds

### SESSION E2
**RISK MANAGEMENT – DECISIONS, DECISIONS**
JOE CONTI

- **525454** – Mains, Trains, and Automobiles: Utilizing Fort Worth’s Risk Assessment Data to Drive Sanitary Sewer Rehabilitation
  **Speaker(s):** Josh Kercho, Liam Conlon

- **743824** – Resilience of Sanitary and Combined Sewer Networks to Extreme Weather Events
  **Speaker(s):** Soroush Zamanian, Abdollah Shafeezadeh, Mehrzad Rahimi

- **743247** – Leveraging a Risk-Based Decision Strategy for Pipeline Management at the City of Houston
  **Speaker(s):** David Totman, Fazle Rabbi
### Pipeline Engineering – Resiliency in Infrastructure

**Tuesday, August 11, 2:30 pm to 3:30 pm**

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**SESSION A3**

**Panel**<br>KYLE COUTURE

**750185 – Nuclear Power Generation – Buried Piping Panel**

**Discussion**

**Speaker(s):** Mark Geraghty, Christopher Burton, David Smith

**SESSION B3**

**USE OF PILOT TUBES**<br>ADAM BRAUN

742062 – Sewer Alignment Complexities in Historic Downtown Temecula<br>**Speaker(s):** Steve Friedman

736127 – Trenchless Soil Stabilization of Marl Prior to Using Pilot Tube Method to Install New Sanitary Sewer Line<br>**Speaker(s):** Stephen Matheny, Daniel DiLeggi, Ben Croy, Britt Babcock

743689 – Finding Big Leaks with Big Data: Case Studies from an Internet-of-Things Leak Detection Platform<br>**Speaker(s):** Matthew Barrett, Robert Welch, Zohreh Andalibi, Tatiana Baeva, Adam Chan

**SESSION C3**

**ASSESSMENTS AND LARGE DIAMETER PIPE**<br>MIKE LARSEN

744264 – Dallas Water Utilities Proactive Assessment Program Conserves Water and Prevents Catastrophic Pipeline Failures<br>**Speaker(s):** George Schae, Michelle Antilla, Felipe Lopez, Johnny Partain

741123 – Performing an RCM/RCD Workshop on the World’s Largest Prestressed Concrete Pipe<br>**Speaker(s):** Jim Geisbush

744343 – How El Paso Water Actively Manages a Critical 20-mile Cross City Water Transmission Main<br>**Speaker(s):** George Schae

**SESSION D3**

**DECIDING WHAT TRENCHLESS IS RIGHT**<br>RICK MIELKE

742050 – Decision Making Process for Identifying Optimum Trenchless Method for Corrugated Metal Pipe Rehabilitation in Stormwater<br>**Speaker(s):** Olufunso Ogidan, Nefi Gazra, Roberto Reyna, Noelle Gaspard

743475 – Mission Critical CMP Replacement<br>**Speaker(s):** Craig Camp

744389 – Large Diameter Cured-in-Place Pipe Rehabilitation of Twin 90-Inch Culverts in Environmentally Sensitive Area<br>**Speaker(s):** Andrew Costa

**SESSION E3**

**USING DRONES AND ALTERNATE METHODS**<br>SCOTT CHRISTENSEN

744256 – Seeing from Above, What’s Below: How Drones can be used in Pipeline Design & Construction<br>**Speaker(s):** William Byland, Natasha Lombard, Michael Liga, Gregory Henry, Venus Price

744512 – A, B, C — 3D Merging the Above-Ground World With What is Below<br>**Speaker(s):** Joseph Murphy, Peter Borsack

744709 – Utility Coordination in Alternative Delivery Methods for Transportation Projects – Lessons Learned from In-Market Design Phase (Bid process)<br>**Speaker(s):** Juan Camilo Barrera, Tom Bodera
## TRACK A
Planning & Design
Rosser Standifer

### SESSION A4
MODELING AND INSPECTION
ROSser STANDIFER
534866 – Utilizing District Metered Area Water Loss Analysis in a Mid-size Utility
**Speaker(s):** Jim O'Dowd
534291 – Design of Sprayed Cementitious Liners Within Corrugated Steel Pipes
**Speaker(s):** Ian Moore
534096 – One Liner to Rule Them All – King County Interbay 48-inch Sewer Forcemain Rehabilitation Story
**Speaker(s):** Matthew Tooley, Steve Lindsey, Raymond (Ray) Nickel, Jeffrey Schmidt

## TRACK B
Trenchless
Jeffrey Shoaf

### SESSION B4
UNDERGROUND BUT NOT FORGOTTEN
KHALID KADDOURA
744604 – “Underground, Under Where?” How Many Communities are Turning to Trenchless Applications to Solve Their Challenges
**Speaker(s):** Jason Swartz
744648 – Case Study: Repurposing an Abandoned 3.2 Mile 66-inch RCP Gravity Sewer as a New Force Main
**Speaker(s):** Andy Stanton, Sandy Scott-Roberts, Richard ten Bosch
741852 – Reducing Damages to Underground Infrastructure: Utility Locators’ Perspectives
**Speaker(s):** Ahmed Al-Bayati, Louis Panzer, Khalid Kaddoura

## TRACK C
Condition Assessment
Jonathan Shirk

### SESSION C4
PANEL
CELINE HYER
735044 – Asset Management Victories and Future Needs
**Speaker(s):** Devan Thomas, Celine Hyer, Ahmad Habibian, Sunil Sinha

## TRACK D
Construction and Rehab
Alisa Gruber/Rich Mielke

### SESSION D4
TRENCHLESS REPAIRS
ALAN HUTSON
742891 – The City of San José Demonstrates Flexibility and Resolution to Accomplish Yard Piping Repairs Safely and Quickly
**Speaker(s):** Bernadette Visitacion-Sumida
**Speaker(s):** Steve Henning
753493 – Assessment and Application of Trenchless Technologies for the Rehabilitation of Sewer Laterals
**Speaker(s):** Joanne Carroll

## TRACK E
UES/Multidiscipline
Doug Jenkins/Jerry Snead

### SESSION E4
I/I ANALYTICS
ANDREW SPARKS
535310 – Transmission Main Leak Monitoring to Reduce Risk and Non-Revenue Water
**Speaker(s):** Paul Murray, Waseem Khan
737033 – Analyzing Existing Flow and Precipitation Records to Allocate Resources for Sewer Inflow and Infiltration Studies
**Speaker(s):** Charles Herckis
743372 – Acoustic-based Underground Utility Mapping at the Annacis Island WWTP
**Speaker(s):** Michael Metcalf, Kenneth Hui, Dave Hoffman, Victor Castellanos, Mike Thorstenson, Gary Skipper, Grey Tarkenton

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**Wednesday, August 12, 10:00 am to 11:00 am**
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<td>SURGES AND TRANSIENTS</td>
<td>FROM CCTV TO HDD</td>
<td>PRIORITIZATION TOOLS</td>
<td>COSTS AND STANDARDS</td>
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<td>743481 – Analyzing Transient Responses of Pumped Pipelines using an Analytic-Energy-Based Approach</td>
<td>740310 – Developing a Proactive City-Wide Stormwater CCTV Master Plan and Condition Assessment Program, San Antonio, TX</td>
<td>734696 – A Data-Driven Approach to Determine If New Water Mains Construction Can Cause Neighboring Old Water Mains to Break</td>
<td>743565 – The High Cost of Using AWWA’s Buried No Longer Pipe Service Life Table for Capital Budgeting</td>
<td>535663 – Unified Approach to Thrust Restraint Design Panel Session</td>
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<td>Speaker(s): David McPherson, Ahmad Malekpour</td>
<td>Speaker(s): Alan Hutson, Tom Hill</td>
<td>Speaker(s): Mohammad Tak, James Kifer, Warren McHenry</td>
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### TRACK A
Planning & Design
Rosser Standifer

### SESSION A6
ALTERNATIVE DELIVERY METHODS
JOSH KERCHO
736902 – How to Make Your Engineer Think Like a Contractor and Vice Versa
**Speaker(s):** Alisa Gruber, Beth Kochur, Bill Williams
744795 – How a Successful Texas Public-Private Partnership Brings Water for the Next Generation
**Speaker(s):** Marisa Vergara, Bill Williams, Carissa Shelley
743495 – CMaR Delivery of Critical Water and Wastewater Pipelines
**Speaker(s):** Steve Pool, Tanner Randall

### TRACK B
Trenchless
Jeffrey Shoaf

### SESSION B6
LARGE TUNNELS
RICHARD NICHOLS
712639 – Risks and Rewards in Completing a Design/Build Tunneling Project
**Speaker(s):** Michael Ramirez, Ivan Hernandez
743838 – Crossing the 4th Largest City in the U.S. with a 90°/84° Pipeline: A Case Study
**Speaker(s):** Jared Barber, Jason Ward, Alan Hutson, Melinda Silva
744580 – Crossing the Red, Managing Construction Changes on a Challenging 1200 mm Microtunnelling River Crossing in Winnipeg, Manitoba, Canada
**Speaker(s):** Adam Braun, Nathan Kehler, Jordan Thompson, Stacy Cournoyer

### TRACK C
Condition Assessment
Jonathan Shirk

### SESSION C6
REHABILITATIONS, CULVERTS AND INFILTRATION
MIKE LARSEN
743702 – DeKalb County: A Large Utility Gaining Efficiencies to Accurately Rehab Assets in a Timely Fashion
**Speaker(s):** Gerardo Boquin, Burhan Shaikh, Darren Eastall
743799 – Estimating Groundwater Infiltration in Sewers
**Speaker(s):** Kevin Enfinger, Patrick Stevens
744644 – Culvert Profiling Using Digital Image Correlation
**Speaker(s):** Amin Darabnoush Tehrani, Zahra Kohankar Kouchestehani, Mohammad Najafi

### TRACK D
Construction and Rehab
Alisa Gruber/Rich Mielke

### SESSION D6
PANEL
JIM ANSPACH
755000 – Near Misses and Close Calls – Risk Management in Utility Construction Panel Session
**Speaker(s):** Jim Anspach, Steve Lang, Paul Bizier

### TRACK E
UES/Multidiscipline
Doug Jenkins/Jerry Snead

### SESSION E6
INFRASTRUCTURE RESILIENCE
JERRY SNEAD II
751568 – Development of a Consequence of Failure Model and Risk Matrix for Water Pipeline Infrastructure Systems
**Speaker(s):** Anmol Vishwakarma, Sunil Sinha
714868 – Surge Phenomenon During Slow Valve Closures in Short Pipelines
**Speaker(s):** Guohua Li
535521 – What is Pipeline Resilience?
**Speaker(s):** Maury Gaston

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Wednesday, August 12, 3:00 pm to 4:00 pm
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**SESSION A7**

CATHODIC PROTECTION AND CORROSION
ZAC BOLEN

- 720087 – Developing a Decision-Support System to Optimize Rehabilitation and Replacement Programs for Ferrous Distribution Mains in Municipal Water Systems
- Speaker(s): Khalid Kaddoura, Bruce Gehrig, Ahmed Al Bayati

- 742418 – Probabilistic Corrosion Modeling to Estimate Design Life of Pipes
- Speaker(s): Chris Atkins, Paul Lambert, Sean Greenwood, Mossan Mahmood

- 743659 – Cathodic Protection of a Long-Distance, Multi-Material Water Pipeline
- Speaker(s): Christopher Sheldon, Chelsea Teall, Shaun Tidwell

**SESSION B7**

EVALUATIONS AND GUIDELINES FOR TRENCHLESS
JEFFREY SHOAF

- 743309 – Evaluation of Ground Displacements and Pulling Forces During Pipe-Swallowing Replacement of Water and Wastewater Pipes in Well-Graded Sand
- Speaker(s): Samuel Ariarathnam, Xufeng Yan, Boaong Ma, Cong Zeng

- 744560 – Evaluation of Construction Methods for a 135-inch Diameter Tunnel Crossing of a Major Highway Bridge
- Speaker(s): Michael Liga, Yovani Zelaya, Kevin Tran

- 736954 – Design Guidelines for the Steel Pipelines of a Major Project in San Antonio, Texas
- Speaker(s): Henry Bardakjian, Mark Bush

**SESSION C7**

PREDICTING TOOLS AND SAVINGS WITH ALTERNATE ALIGNMENTS
SHAOQING GE

- 744133 – One If by Air, Two If by Land – Savings with Aerial Surveying for Transmission Lines
- Speaker(s): Hunter Hanson, Mike Dooley

- 736001 – Predicting Condition of Sanitary Sewer Pipes with Gradient Boosting Tree
- Speaker(s): Mohammadreza Malek Mohammadi, Mohammad Najafi, Nazanin Salehabadi, Ramtin Serajianzadeh, Vinayak Kaushal

- 718417 – Kennedy Newton Main and the Challenges of Design and Construction of Large Diameter Watermains in Urban Areas
- Speaker(s): Yariv Ben-Shooshan, Amer Nawaz

**SESSION D7**

SURVIVING EARTHQUAKES AND SOME HISTORY
ALAN HUTSON

- 744788 – Positive Unintended Consequences – How Campbell Lake Gravity Sewer Pipeline Line Survived a Magnitude 7.1 Earthquake
- Speaker(s): David A Persinger, Maury Gaston

- 744523 – Valve Houses at Houston Ship Channel
- Speaker(s): Benjamin McCray, Manny DePau, Anh Hunter

- 742499 – DC Water At Work: Mitigating Century Old Infrastructures From Historic Storms
- Speaker(s): Steve Bian, Renni Zhao, Tayo Olatunji, Dunbar Regis

**SESSION E7**

FUNDING AND INTERNATIONAL METHODS
JERRY SNEAD II/DOUG JENKINS

- 744640 – Ten Things You Need to Know About State Revolving Fund American Iron and Steel Requirements
- Speaker(s): Kirsten Anderer

- 752167 – How Innovative and Adaptive Solutions were used to Solve Challenges Faced by Contra Costa Water District’s Canal Replacement Project
- Speaker(s): Colin Dudley, Peter Bellows, Peter Stabb, Sarah La Valle

- 742424 – Mutual Learning: A Comparison Between the Dutch and International Utility Surveying Approaches
- Speaker(s): Ramon ter Huurne, Léon olde Scholtenhuis, André Dorée
### Thursday, August 13, 12:30 pm to 1:30 pm

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#### SESSION A8
**SEISMIC ENGINEERING AND RESILIENCE**

**JOSH KERCHO**

744330 – Seismic Resilience Enhancement of Water Pipe Networks Using Hybrid Metaheuristic Optimization  
**Speaker(s):** Binaya Pudasaini, Mohsen Shahandashti

**Speaker(s):** Chris Sundberg, Terri Tovey

744041 – Newly Developed Seismic Resilient Steel Pipe Joint Safeguards Pipeline Structural Integrity during Severe Geohazard Events  
**Speaker(s):** Spyros A. Karamanos

#### SESSION B8
**MATERIALS AND THEN SOME**

**RICHARD NICHOLS**

744210 – Save Money by Shopping Around – Competing Pipe Materials for Large Diameter Pipelines  
**Speaker(s):** Eric Engelskirchen, Chad Sharbon, Travis Williams

744005 – Experimental Investigation of Steel Lap-Welded Pipe Joint Performance Under Severe Axial Loading Conditions in Seismic or Geohazard Areas  
**Speaker(s):** Spyros Karamanos, Brent D. Keil, Fritz Gobler, Richard Mielke, Gregory Lucier, Giannoula Chatzopoulou, Gregory Sarvanis, Dimitris Fappas

713933 – Method to Evaluate Fatigue Life Calculations in PVC Pipe  
**Speaker(s):** Steven Folkman, Jay Parvez

#### SESSION C8
**FROM DELIVERY TO INSTALLATION**

**KALYAN PIRATLA**

736974 – Beating the Clock: Leveraging the Flexibility of Design Build to Fast Track Pipe Delivery  
**Speaker(s):** Alisa Gruber, Bill Williams, Ricky Wu

721906 – A Compelling Comparison of Field Measurements and Numerical Modeling in Pipeline Surge Pressure Evaluation  
**Speaker(s):** Brandon Billing

751646 – Proof Positive: Pipe Prove-out Procedure Promotes Proper Installation During Construction  
**Speaker(s):** George Farah, Amanda Voss

#### SESSION D8
**REHAB METHODS AND ANALYSIS**

**ROWENA PATENAUDE**

744769 – Framework for Life-Cycle Cost Analysis of Trenchless Renewal Methods for Large Diameter Culverts  
**Speaker(s):** Ramtin Serajian, Mohammad Najafi, Mahammadreza Malek Mohammadi, Vinayak Kaushal

744592 – Internal Joint Bonding of Prestressed Concrete Cylinder Pipe: The Improbable Project  
**Speaker(s):** Gregory Smith

731194 – Bonded or Unbonded Liners? How Longitudinal Bending Impacts Pipe Lining Design and Performance  
**Speaker(s):** David P. Kozman

#### SESSION E8
**PANEL**

**ANNA PRIDMORE**

753687 – Ethics Session  
**Speaker(s):** Anna Pridmore
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**SESSION A9**

**WATER SUPPLY AND PRESSURES**

ZAC BOLEN

741981 – Lake Perris Modifications – Putting the Long-term Benefits Above Cost

Speaker(s): Michael McReynolds, Andrew Brainard, Wayne Thilo, Cherylle Barrido

744564 – Keeping the Water Moving: Solving Pressure Problems with Multiple Constraints in Stillwater, Oklahoma

Speaker(s): Lars Ostervold, Jennifer Henke, William (Bill) Mills, David Barth

742271 – Diagnosing Pumping Instabilities in the Southern Delivery Raw Water System

Speaker(s): Thomas Charles, Joseph Rasmussen, Mark Allen

**SESSION B9**

**REHABILITATION AND OTHER TOPICS**

KAHID KADDOURA

741798 – Too Pure Water from Orange County Water District Results in Pipeline Rehabilitation Project

Speaker(s): Sandy Scott-Roberts, Benjamin Smith

743493 – Has This Been Tried Before? - Using Trenchless Technology in a Revolutionary Sewer Tunnel Rehabilitation

Speaker(s): Randall Parks

744493 – Revising the City of Houston’s Standard Butterfly Valve Detail for Large Diameter Butterfly Valves

Speaker(s): Michael Salinas, Warren Green, Kevin Tran

**SESSION C9**

**LARGE DIAMETER SPECIAL INSTALLATIONS**

JONATHAN SHIRK

742525 – Design of Large Diameter Steel Pipe Tees and Wyes

Speaker(s): Russell Gibson, Steven Metzler, Himan Jalali, James Johnson, Peter Bartels

736544 – Large Diameter Welded Steel Pipe Deflection, Working Beyond the Traditional

Speaker(s): Kevin Martinez, Phil Ryan, Ted Davis

744466 – Construction of 176-in and 156-in Diameter Cast-in-Place Reinforced Concrete Siphons Expanding the East Low Canal Main

Speaker(s): Kylie Pelzer

**SESSION D9**

**TRENCHLESS REHABS**

ROWENA PATENAUDE

753284 – Five Trenchless Rehab Projects Save Failing Large Diameter Combined Sewer Structures in Albany, NY

Speaker(s): Keith Walker, Rebecca Caldon

744117 – Structural Renewal of Non-Circular Pipe: Trenchless Rehabilitation in a Congested Utility Corridor

Speaker(s): Carl Krogness, Kara Britt, Michael A. Owen

743732 – Dallas Water Utilities Uses Sliplining to Rehabilitate Aging 24-Inch Water Transmission Main

Speaker(s): Kevin C. Minkler, Eduardo Valerio, Thelma Box

**SESSION E9**

**LIFESPAN, SOCIAL COSTS AND WELDING**

JERRY SNEAD II/DOUG JENKINS

535636 – Joint Strength or “Efficiency” Factors of Steel Lap-Welded Joints for Use in Water Conveyance

Speaker(s): Spyros Karamanos, Robert Card, Giannoula Chatzopoulou, Gregory C. Sarvanis

736362 – Life of a 96-inch Water Line

Speaker(s): Gregory Henry, James Wilson

742022 – A Framework for Evaluation of Social Costs of Open-cut Pipeline Replacement for Sanitary Sewers

Speaker(s): Vinayak Kaushal, Mohammad Najafi, Ramtin Serajianehrani, Mohammadreza Malek Mohammadi
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